

Appendix B

Odour Sampling Results

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THE ODOUR UNIT



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UNIT

Aust. Technology Park Phone: +61 2 9209 4420
Locomotive Workshop Facsimile: +61 2 9209 4421
Suite 16012 Email: info@odourunit.com.au
2 Locomotive Street Internet: www.odourunit.com.au
Eveleigh NSW 2015 ABN: 53 091 165 061



Accreditation Number:
14974

Odour Concentration Measurement Results

The measurement was commissioned by:

Organisation	AECOM	Telephone	(02) 4911 4900
Contact	Holly Marlin	Facsimile	(02) 4911 4999
Sampling Site	Undisclosed	Email	Holly.Marlin@aecom.com
Sampling Method	Undisclosed	Sampling Team	AECOM

Order details:

Order requested by	H. Marlin	Order accepted by	J. Schulz
Date of order	07/03/2013	TOU Project #	N1864R
Order number	67584AUS	Project Manager	J. Schulz
Signed by	Refer to correspondence	Testing operator	A. Schulz

Investigated Item	Odour concentration in odour units 'ou', determined by sensory odour concentration measurements, of an odour sample supplied in a sampling bag.
Identification	The odour sample bags were labelled individually. Each label recorded the testing laboratory, sample number, sampling location (or Identification), sampling date and time, dilution ratio (if dilution was used) and whether further chemical analysis was required.
Method	The odour concentration measurements were performed using dynamic olfactometry according to the Australian Standard 'Determination of Odour Concentration by Dynamic Olfactometry AS/NZS4323.3:2001. The odour perception characteristics of the panel within the presentation series for the samples were analogous to that for butanol calibration. Any deviation from the Australian standard is recorded in the 'Comments' section of this report.
Measuring Range	The measuring range of the olfactometer is $2^2 \leq \chi \leq 2^{18}$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted. The machine is not calibrated beyond dilution setting 2^{17} . This is specifically mentioned with the results.
Environment	The measurements were performed in an air- and odour-conditioned room. The room temperature is maintained between 22°C and 25°C.
Measuring Dates	The date of each measurement is specified with the results.
Instrument Used	The olfactometer used during this testing session was: ODORMAT SERIES V04
Instrumental Precision	The precision of this instrument (expressed as repeatability) for a sensory calibration must be $r \leq 0.477$ in accordance with the Australian Standard AS/NZS4323.3:2001. ODORMAT SERIES V04: $r = 0.3234$ (September 2012) Compliance – Yes
Instrumental Accuracy	The accuracy of this instrument for a sensory calibration must be $A \leq 0.217$ in accordance with the Australian Standard AS/NZS4323.3:2001. ODORMAT SERIES V04: $A = 0.1995$ (September 2012) Compliance – Yes
Lower Detection Limit (LDL)	The LDL for the olfactometer has been determined to be 16 ou (4 times the lowest dilution setting)
Traceability	The measurements have been performed using standards for which the traceability to the national standard has been demonstrated. The assessors are individually selected to comply with fixed criteria and are monitored in time to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen.

Date: Friday, 15 March 2013

Panel Roster Number: SYD20130313_021

J. Schulz
NSW Laboratory Coordinator

A. Schulz
Authorised Signatory

Odour Sample Measurement Results
Panel Roster Number: SYD20130313_021

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Nominal Sample Dilution	Actual Sample Dilution (Adjusted for Temperature)	Sample Odour Concentration (as received, in the bag) (ou)	Sample Odour Concentration (Final, allowing for dilution) (ou)	Specific Odour Emission Rate (ou.m ³ /m ² /s)
001 – Blank	SC13162	12/03/2013 0640hrs	13/03/2013 1027hrs	5	10	-	-	<16	<16	N/A
002 – Stormlote	SC13163	12/03/2013 0917hrs	13/03/2013 1100hrs	5	10	-	-	208	208	N/A
003 – Stormlote	SC13164	12/03/2013 0927hrs	13/03/2013 1130hrs	5	10	-	-	256	256	N/A
004 – Drill Mud Pool	SC13165	12/03/2013 1023hrs	13/03/2013 1206hrs	5	8	-	-	197	197	N/A
005 – Drill Mud Pool	SC13166	12/03/2013 1106hrs	13/03/2013 1337hrs	5	8	-	-	69	69	N/A
006 – Drill Mud Pool	SC13167	12/03/2013 1123hrs	13/03/2013 1407hrs	5	10	-	-	39	39	N/A

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd:

1. The collection of Isolation Flux Hood (IFH) samples and the calculation of the Specific Odour Emission Rate (SOER).
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit Pty Ltd. have performed the dilution of samples.

Odour Sample Measurement Results
Panel Roster Number: SYD20130313_021

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Nominal Sample Dilution	Actual Sample Dilution (Adjusted for Temperature)	Sample Odour Concentration (as received, in the bag) (ou)	Sample Odour Concentration (Final, allowing for dilution) (ou)	Specific Odour Emission Rate (ou.m ³ /m ² /s)
007 – General Soil	SC13168	12/03/2013 1214hrs	13/03/2013 1421hrs	5	10	-	-	416	416	N/A
008 – General Soil	SC13169	12/03/2013 1252hrs	13/02/2013 1535hrs	5	10	-	-	724	724	N/A
009 – Hazardous Soil	SC13170	12/03/2013 1338hrs	13/02/2013 1614hrs	5	10	-	-	892	892	N/A
010 – Hazardous Pile	SC13171	12/03/2013 1351hrs	13/03/2013 1647hrs	5	10	-	-	892	892	N/A

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Odour Panel Calibration Results

Reference Odorant	Reference Odorant Panel Roster Number	Concentration of Reference gas (ppb)	Panel Target Range for n-butanol (ppb)	Measured Concentration (ou)	Measured Panel Threshold (ppb)	Does this panel calibration measurement comply with AS/NZS4323.3:2001 (Yes / No)
n-butanol	SYD20130313_021	50,000	$20 \leq \chi \leq 80$	724	69	Yes

Comments None.

Disclaimer Parties, other than TOU, responsible for collecting odour samples hereby certify that they have voluntarily furnished these odour samples, appropriately collected and labelled, to The Odour Unit Pty Ltd for the purpose of odour testing. The collection of odour samples by parties other than The Odour Unit Pty Ltd relinquishes The Odour Unit Pty Ltd from all responsibility for the sample collection and any effects or actions that the results from the test(s) may have.

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Eveleigh NSW 2015 ABN: 53 091 165 061



Accreditation Number:
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Odour Concentration Measurement Results

The measurement was commissioned by:

Organisation	AECOM	Telephone	(02) 4911 4900
Contact	Holly Marlin	Facsimile	(02) 4911 4999
Sampling Site	Undisclosed	Email	Holly.Marlin@aecom.com
Sampling Method	Undisclosed	Sampling Team	AECOM

Order details:

Order requested by	H. Marlin	Order accepted by	J. Schulz
Date of order	07/03/2013	TOU Project #	N1864R
Order number	67584AUS	Project Manager	J. Schulz
Signed by	Refer to correspondence	Testing operator	A. Schulz

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Measuring Range	The measuring range of the olfactometer is $2^2 \leq \chi \leq 2^{18}$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted. The machine is not calibrated beyond dilution setting 2^{17} . This is specifically mentioned with the results.
Environment	The measurements were performed in an air- and odour-conditioned room. The room temperature is maintained between 22°C and 25°C.
Measuring Dates	The date of each measurement is specified with the results.
Instrument Used	The olfactometer used during this testing session was: ODORMAT SERIES V04
Instrumental Precision	The precision of this instrument (expressed as repeatability) for a sensory calibration must be $r \leq 0.477$ in accordance with the Australian Standard AS/NZS4323.3:2001. ODORMAT SERIES V04: $r = 0.3234$ (September 2012) Compliance – Yes
Instrumental Accuracy	The accuracy of this instrument for a sensory calibration must be $A \leq 0.217$ in accordance with the Australian Standard AS/NZS4323.3:2001. ODORMAT SERIES V04: $A = 0.1995$ (September 2012) Compliance – Yes
Lower Detection Limit (LDL)	The LDL for the olfactometer has been determined to be 16 ou (4 times the lowest dilution setting)
Traceability	The measurements have been performed using standards for which the traceability to the national standard has been demonstrated. The assessors are individually selected to comply with fixed criteria and are monitored in time to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen.

Date: Friday, 15 March 2013

Panel Roster Number: SYD20130314_022

J. Schulz
NSW Laboratory Coordinator

A. Schulz
Authorised Signatory

Odour Sample Measurement Results
Panel Roster Number: SYD20130314_022

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Nominal Sample Dilution	Actual Sample Dilution (Adjusted for Temperature)	Sample Odour Concentration (as received, in the bag) (ou)	Sample Odour Concentration (Final, allowing for dilution) (ou)	Specific Odour Emission Rate (ou.m ³ /m ² /s)
001 – Blank	SC13172	13/03/2013 0709hrs	14/03/2013 1024hrs	4	8	-	-	<16	<16	N/A
002 – Grease Oil Pit	SC13173	13/03/2013 0839hrs	14/03/2013 1050hrs	4	8	-	-	7,510	7,510	N/A
003 – Grease Oil Pit (Solids)	SC13174	13/03/2013 0851hrs	14/03/2013 1117hrs	4	8	-	-	3,440	3,440	N/A
004 – Grease Oil Pit (Liquids)	SC13175	13/03/2013 0934hrs	14/03/2013 1145hrs	4	8	-	-	2,440	2,440	N/A

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2. Final results that have been modified by the dilution factors where parties other than The Odour Unit Pty Ltd. have performed the dilution of samples.

Odour Panel Calibration Results

Reference Odorant	Reference Odorant Panel Roster Number	Concentration of Reference gas (ppb)	Panel Target Range for n-butanol (ppb)	Measured Concentration (ou)	Measured Panel Threshold (ppb)	Does this panel calibration measurement comply with AS/NZS4323.3:2001 (Yes / No)
n-butanol	SYD20130314_022	50,000	$20 \leq \chi \leq 80$	1,024	49	Yes

Comments None.

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